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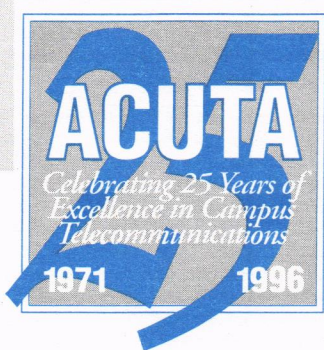
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October 1996

Association of College & University
Telecommunications Administrators



THE VOICE OF
TELECOMMUNICATIONS
IN HIGHER EDUCATION

Kent State Implements Student Information Management System

Roberta Sikula, Registrar
Kent State University

Two years after Kent State University began implementation of a new integrated student information management system, the multi-campus SIS is operational, bringing improvements to student services, enhancing academic advising capabilities, and providing easily accessible data for timely decision making. Although final numbers are not in, we estimate that we have converted 220,000 student transcripts from 2,500,000 section records and over 5,000,000 financial aid records to the new system.

The SIS project—which involves all eight campuses and data conversion from Fall 1979 to the present—is easily one of the larger student information management installations nationally. We involved over one hundred key people in the development and implementation of the SIS software and hundreds more have gone through initial training in the use of the software.

What is SIS?

Student Information System—SIS—is software designed to help colleges and universities manage student data. We purchased management software for Admissions, Financial Aid, Records and Registration, Bursar, and Housing. This software operates on a relational database and is term- and table-driven, allowing us to process student data for multiple terms while inhibiting the loading of wrong data into the database.

For the first time at Kent State, all the student processing software will be integrated; this means, for example, that a change of student address will immediately update all systems and each registration transaction immediately affects student account balances. Also for the first time, with the installation of T1 lines for access, all eight Kent State campuses will be processing student data on-line, on the same database.

See "Kent State..." on page 2

Authors Sought for ACUTA Journal

The Publications Committee has officially issued a call for articles for the *ACUTA Journal of Telecommunications in Higher Education*. The first issue of the *Journal* is scheduled to be mailed March 1, 1997. The theme of that issue is Integrating Networks, and articles are being sought that will address such questions as:

- What forces are driving integration: the market, technology, or both?
- Is a convergence model or full integration model appropriate to the Higher Education environment?
- How will local cable plant standards and cost be affected?
- To what degree can service organizations for voice, data, and video be effectively merged?

The Committee is seeking to identify authors who have a high level of expertise and the ability to convey the information clearly and succinctly.

According to Committee Chair Mark Kuchefski, "As we state in our mission state-

ment, we want to provide the core membership with educational and developmental opportunities. We expect to include original articles from some recognized experts in the field of telecommunications as well as case studies from among our own membership."

If you are interested in submitting an article for the *Journal*, or if you know someone who would like to receive our author's guidelines, contact Pat Scott in the ACUTA office (606/278-3338; pscott@acuta.org).

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**Board Report
September**

Board and Committee Chairs Meet in Lexington

The full Board and Committee Chairs recently met in Lexington to evaluate plans for the new year. The current Strategic Plan was used as a guide to measure where we are and what adjustments needed to take place as we push forward in our rapidly changing technical arena. While there were many topics of discussion over the 2 1/2 day period the highlights were as follows:

- Progress of *The ACUTA Journal*
- Rotation of members that serve on committees
- Filling State and Province Coordinator positions
- Review of action items from all the Committee Chairs.
- Increased interaction among committees
- Upcoming planning and financial needs
- Sponsorship of the Institutional Excellence Award
- ACUTA's position in new technologies
- Development of a new strategic plan
- Discussion of Legislative/Regulatory "White Papers"
- Discussion of the rights and privileges of Corporate Affiliates

Respectfully submitted,

Buck Bayliff

Buck Bayliff
Wake Forest University
ACUTA Secretary/Treasurer

Kent State...

Continued from page 1

After SIS, then what?

Within the next two years, we will be using the new system to send and receive student academic and financial aid transcripts electronically, to automatically articulate course equivalencies from our primary "feeder" universities and colleges, and to process and send a subsequent degree audit report. All of this will happen within minutes of receiving the transcript. We believe we will be on the leading edge in the integrated use of this type of technology.

Within the next few months we will also begin the process of "coming out of paper" by using digitized imaging technology. Digitized imaging, combined with the continuing development of LANs across campus, will greatly increase the ease of data storage and retrieval for everyone and provide secured electronic access to student files—now available only on paper in someone's office.

Student access to their own information will also be increased (in a secured fashion) over the coming months by expanded use of strategically located kiosks, computer labs, residence hall hookups, and networks. Such access will enable students to personally update their address and telephone number online as well as review "what if" degree audit reports to make informed program changes.

It is not often that a large group of people, from a wide variety of campus constituencies, gets to work together on a project that will have such a major effect on the institution. We are committed to involving the campus community to ensure that SIS meets the needs of all eight campuses and that we are maximizing the potential of the new software.

Association of College and University Telecommunications Administrators

ACUTA NEWS, Vol. 25, No. 10

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Welcome New Members

September, 1996

Institutional Member

- Milligan College, Milligan College, TN. Kent McQuiston, 423/461-8750; Tier 1
- Nicolet Area Technical College, Rhinelander, WI. Bruce Baron, 715/365-4413; Tier 1
- Western New Mexico Univ., Silver City, NM. Rick O'Ryan, 505/538-6436; Tier 1

Corporate Affiliate

COPPER LEVEL

- Cox Communications, Atlanta, GA. Peter Dieraux, 404/843-5581

Managing a multiple platform campus network with thousands of desktops and servers is no easy task. But the tougher the challenge, the more thrilling success can be.

A successful network is much more than just electronic plumbing. It means providing the scaleable performance, flexibility, and reliability to deliver bandwidth on demand, supporting multimedia traffic, and simplifying network administration. Data mining, data warehousing, cyberspace commerce, universal messaging, graphical user interface, voiceLAN, virtual reality, and interactive computer telephony applications continue to replace the primary text applications of previous years. Today's architectures continue to fall far short of the demands and requirements of tomorrow's applications. Solutions are being demanded that are pushing the limits of traditional LAN technologies. Today, network applications and desktop computers are orders of magnitude more powerful than just a few years ago.

New switched-based internetworking technologies have evolved that promise to provide the building blocks to meet campus communications backbone requirements of the 21st century. Some are simply enhanced versions of existing products, but four—frame, cell, frame cell, and VLAN switching—provide a broad portfolio of new capabilities for the campus telecommunications professional. These technologies provide enormous potential for simplifying network administration and configuration management.

Frame switching provides an attractive price performance alternative for relieving network congestion on 100 mbps or less LANs while protecting user investments in station software, network interface cards, and building wiring as well as ensuring that existing applications and networking operating systems run unchanged. Overall throughput of payloads is increased by attaching the various segments on a shared media hub to a separate port on the switch which provides full LAN bandwidth. Frame switching also provides a cost effective alternative to leased-line networks by supporting a high-performance, bandwidth-flexible, and multiprotocol WAN fabric that can integrate SNA, serial, and LAN applications. Thanks to improved price performance, coexistence with ATM, digital line subscriber and ISDN, there is increasing demand for frame switching.

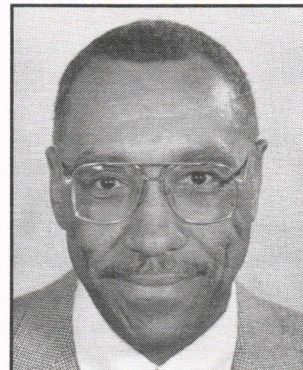
For links over 100 mbps and multimedia applications, **cell switching** is required. Cell switching's big pipe scalability and its dexterity at handling a mixed bag of applications and bit streams make it the infrastructure of choice. It scales to gigabit speeds, carries all traffic forms, and guarantees quality of service.

Cell switching differs from frame switching in two major ways. First, internetwork cell traffic travels over a virtual circuit to ensure quality of services, while frame traffic of frame switching is connection-less. Secondly, cell switches move cell payloads of 48 bytes and each session is like a telephone call. Cells do not flow until an end-to-end path has been established and resources reserved. Frame switches move ethernet frame payloads that can vary from 45 to 1500 bytes. Each frame payload is a separate packet that is forwarded like the U.S. mail from point to point without a preordained path or guaranteed resources. The short cell length, virtual circuits, and predictability of cell switching give ATM capabilities that cannot be achieved with frame switching.

The need to use both frame and cell switching technologies in a single network has given rise to a hybrid technology: frame-cell switches. Like a frame switch, it interfaces directly to ethernet shared media hubs and is transparent to applications, NICs, and the network operating system. Like a cell switch, it sends traffic across the backbone as cells, keeping latency to a minimum in meeting stringent quality-of-control requirements of voice and multimedia applications. VLAN switching provides an attractive list of value added capabilities that complement frame and cell switching. It allows a more efficient alignment of traffic flow across the network by separating addressing from the physical network architecture and topology. VLAN seeks to maximize the performance benefits of device portability and segmentation while minimizing the number of subnets by assigning subnet addresses to a VLAN rather than the physical LAN segment. Fewer subnets means fewer network address reconfigurations as a result of moves, adds, and changes.

These four switching technologies provide enormous potential to telecommunications professionals who are faced with the challenge of re-engineering 100 mbps ethernet and token ring FDDI campus

President's Message



Dr. James S. Cross

Michigan Technological
University

ACUTA President
1996-1997

backbones to meet the needs of "big-pipe, bandwidth-hungry" multimedia and virtual reality applications of the 21st Century. A survey of the literature indicates four major internetworking architectures are evolving to replace the FDDI backbone: ATM-Based Distributive Backbone, Frame-Based Virtual Collapsed Backbone, ATM-Based Collapsed Backbone, and Integrated Routing-Switching Backbone.

The ACUTA Board, Program Committee, and Publications Committee will continue to monitor the deployment of internetworking architectures and developments in the marketplace. We welcome feedback from you as the merits of these technologies are considered and deployed on your campuses.

FlexSourcing: "Win-win" Style Outsourcing

John Turner
NEC BCS, Inc.

The media has inundated us recently with endless information about Outsourcing—also called Partnering, Strategic Partnering, Virtual Corporations—as a result of Downsizing or Rightsizing, just to use a few of the myriad of popular acronyms we hear today. This is not a bad thing, in and of itself; the problem is that we just don't hear enough about the *customers*—customers who are the benefactors, supposedly, of these relationships.

Webster defines *partnership* as: "The relationship between two or more competent persons who have contracted to join in business, and share in the profits."

"Vendors of Today's Technology" seem to have lost sight of who the "competent persons" are that make up those partnerships. We get so wrapped up in the hype of the partnering frenzy that the main focus has been lost. What happened to the win-win scenario?

Traditional Associations

Outsourcing has carried with it a negative mystique, not entirely undeserved. By way of explanation, the first misconception arose from the historically vendor-driven nature of outsourcing. Calling on a prospective customer, the vendor would outline a plan. If the plan didn't fit the organization, the customer usually had to institute a number of changes in its structure to accommodate the plan. (This rigidly designed approach didn't ask the right questions of the customer.)

Second, outsourcing was almost always perceived as a cost-cutting measure. It became perceptually aligned with serious financial difficulties.

Third, concerns surrounding traditional outsourcing practices included fears that the vendor would conduct across-the-board replacements of existing positions with their own personnel. This type of outsourcing generally required customers to relinquish control of the operational functions of systems and entire networks.

What these practices produce is not a win-win situation, but rather a "win - ?" The win is secured on the vendor's side of the equation, because they get what they came for. The balance of the equation represents the question: "Does the campus community win?" Sometimes it does... hopefully more times than not. But the real problem with this relationship is that the vendor is not tied to the second half of that equation, which is the key to ensuring the win-win.

Refocusing

I strongly believe in Customer Focused Outsourcing, an approach which puts the control back into the customer's hands. You should have managerial control of your facilities, whether you are actually running them or not. "Never outsource anything you can't manage yourself" is good advice.

Vendors must take the initiative to put outsourcing back on a win-win track. I have coined a new term for a "kinder, gentler" outsourcing which I call flexsourcing. With flexsourcing the real power and flexibility is back in the customer's control, where it should be, and the customer has the ability once again to participate in determining—or more appropriately, manage—his or her own fate.

Some of the benefits of outsourcing include cost savings, access to World Class services and products, freeing up capital to put toward more direct academic improvements, and much more. But institutions should not be compelled to give up control, jobs, and flexibility to reap these benefits.

In the July '96 issue of *Phone+*, Dr. Sherry Manning, founder and CEO of the largest not-for-profit, long distance buying consortium, ECCI, referred to a paradigm shift taking place in today's college and university telecommunications departments. "They [College and University Telecommunications Departments] are challenging the traditional ways of doing things, and they are making changes. These changes are not linear, such as an increase or decrease in

pricing for service. The changes are structural paradigm shifts that are at the core of the provisioning of services."

She further explains that the institution's focus must be returned to the student and the administrative user. "The shift for the University from passive consumer to active service provider, represents a fundamental change in control."

The ultimate goal must be to build "Virtual Organizations" from these relationships between vendors and customers, and working together to perform functions that previously were carried out by a very structured organizational approach to outsourcing.

First Steps

If we conclude that structural change is for the most part good, if not inevitable, and if structural change in the traditional approach to outsourcing is not only an interesting idea but is badly needed, where do we start to ensure that we are taking the *Control Approach*, rather than abdicating control to the vendor?

There are a few key questions to ask as an institution, in order to take the first steps toward flexsourcing. Begin with:

- What activities are at the core of the Institution that we must continue to do ourselves?
- What are the "commodity-like" activities that we can easily give away to others?
- Most importantly, what can we do better if we were to partner with someone else?

The answers to these questions are likely to lead you and your organization to discover your "core competencies," those skills, activities, and capabilities that are absolutely critical to your organization's success that no one could do better than yourselves. Once identified, they should be retained as in-house activities and removed from the list of possibilities. Any activities that are not at the "core" are then good candidates for outsourcing.

Next, prior to finalizing the list of services that you may want to outsource, you must ask: "Why are we really outsourcing this?" and "What do we expect to gain and/or accomplish by creating an external relationship to handle this?"

Answering these questions will help to solidify your list as well as your overall goals throughout the search process for your vendor/partner. Armed with this information, you can proceed with the search for potential outsourcing partners.

Relationships

There are two key components to any outsourcing arrangement that should be used as the framework of any relationship that results from this process. The first is *Composition*. This refers to the make up of the actual relationship between the institution and the vendor. I encourage all institutions to take the leadership role and not be locked into a particular vendor's preferred structure or forced into a cookie-cutter deal. The resulting relationship must be flexible throughout the entire term of the contractual relationship. (Terms as long as 10 to 15 years are not unheard of.)

As an example, your vendor partner must be willing to provide what I call *staff augmentation*. Your organization may be strong in one area, such as technical staff, but as you consider, for example, implementing a resale program for the entire campus, you may not have the required customer service staff. Staff augmentation means your vendor will fill in the gaps rather than replace existing positions.

The second key component is *Compensation*. Relationships in an outsourcing program must be *risk-reward* related. The benefits that the vendor realizes must be tied directly to the results that they produce on your campus with your users. This may include, among other things, an initial buy-in up front. There are several new approaches to outsourcing that include financial (or other) buy-in to the program at its inception.

Throughout the term of the relationship, there are other sharing opportunities that should be considered. One of these—not a new concept—is profit shar-

ing. The sharing of profits is simply an agreed upon disbursement of the net profits generated through the operations of your program. Another relatively new concept is *gain sharing*. Gainsharing recognizes the reality that over time, there are reductions in costs in the operation of a business entity, mainly due to economies of scale and changing market condition. These gains are typically applied entirely unseen to the vendor's bottom line. This approach adds those reductions in operating costs to the net operating profits, which are then subjected to the same disbursements as profit sharing.

The bottom line is that outsourcing must be approached, viewed, and implemented as a strategic management tool and not simply as the means to an end. In addition, all relationships of this type must produce a true win-win scenario. Without that second win, you don't have a partnership, and your vendor probably wins regardless of the results produced on your campus.

Challenge

The landscape of outsourcing is changing forever, and should no longer be viewed as an end result of financial crisis, or simply a cost-cutting tool, or even a barbaric management approach to reduce staff. Outsourcing has become a powerful strategic management tool. It should be considered by your organization as a legitimate option to help you reach your institutional goals.

These five guidelines will help make flexsourcing work for you:

1. Assume the leadership role in those relationships
2. Demand a flexible partnership structure with all your vendor/partners
3. Expect buy-in from serious vendors during initial investigations
4. Negotiate performance-related rewards into any partnering arrangement
5. Insist on regular open book reviews of the financial and operation status of your venture

Remember above all else, these are your customers, students, and users, and that your first and foremost responsibility lies with them. And furthermore, nothing that falls short of a true win-win for all parties is acceptable.

Fraud stopped at McGill

Gary G. Bernstein
Associate Director, Telecom
McGill University

On the subject of fraud—and aren't we always?—here's one low-tech, yet effective, ploy that actually happened at McGill recently.

A student staked out a secretary's desk to observe her daily habits. The desk was in an enclosed office, but right near the front door to the office, just off a public corridor. The student observed when the secretary took her coffee breaks. Let's say the secretary's telephone number was 555-1000.

In the public corridor were some public payphones. (Isn't that one of those songs I used to sing with my kids years ago?) The student would, on a daily basis, place a third-party paid long distance call to an international location from the payphone at the same time that the secretary took her break. He would ask the overseas operator to charge the call to 555-1000. The operator would dial 555-1000 to verify that the charges for the call would be accepted.

The student would quickly dash into the secretary's office, pick up the 555-1000 ringing line and, disguising his voice, accept the charges. Then he would return to the payphone and enjoy the rewards of his effort.

The student got greedy, and that's how we caught him (shades of Goldilocks here)! We only found out about the maneuver the following month when we received our long distance bill. The student, thinking that this was like *carte blanche* at a banking machine, continued his fraud, by now selling time on the payphone to other students who had international calls to make. Our campus police staked out the location and grabbed him. (My, that phone is much too hot!)

DC at a glance

Whitney Johnson

(Retired)

Northern Michigan University

Whitney L. Johnson

The FCC has issued a new ruling planned to block toll-free fraud.

The rules are to keep pay-per-call service providers from misleading consumers about the cost of calls they think are free. In response to over 10,000 complaints from consumers, businesses and institutions, including ACUTA, the FCC finalized its rules which prohibit charging callers to toll-free numbers for information services unless the caller has agreed in writing to be charged, or pays for the service through direct remittance, prepaid account or a debit calling card. Details on the ruling can be found in CC Docket No. 96-146 and CC Docket No. 93-22.

Recent issues of *Telecommunications Reports* (TR) and 411 indicate that a lot of organizations, companies, and states are unhappy with the plan that the FCC ordered on August 8th. By September 6, appeals to FCC's "interconnection" order had been filed with the U. S. Courts of Appeal for the D. C. Circuit, for the Fifth Circuit (New Orleans), for the Second Circuit (New York), and for the Eighth Circuit (St. Louis). Appeals have been filed on behalf of state public service commissions (PUC) and Regional Holding Companies (RHC) among others. Several other PUCs and companies involved in provision of some form of telephone service were still considering and/or planning to file before the ten-day time limit ran out.

States are concerned about federal-state jurisdictional issues as they relate to who has the authority on a given issue. "The National Association of Regulatory Utility Commissioners (NARUC) 'cited 'fundamental disagreements' with the FCC's conclusions, particularly its interpretation of the federal-state 'division of responsibilities' required by the telecom law," says *Telecommunications Reports* (9/2).

FCC Chairman Hundt has indicated that he sees the NARUC appeal as "inconsistent with the idea of state-federal partnership" as envisioned by Congress, particularly after the states had a hand in writing the order." (TR 9/2) The President of NARUC "believes the Act created a federal-state partnership but said the FCC sees itself as the senior partner and the states as the junior partners." (TR 9/2) NARUC wants a joint partnership where they can and actually do work together. One state PUC is objecting to the establishment in the order of three density zones for setting geographically de-averaged rates for unbundled local loops. The state is concerned that the competitive local exchange carriers (CLEC) would "cherry pick" customers in low-cost urban and suburban areas, while blacklisting rural areas.

The default resale discount range of 17% to 25% proposed in the order as a guideline for states to use in arbitrating dis-

putes between LECs and CLECs is also causing considerable concern. It seems to depend on which side of the fence a company is sitting on as to whether the company likes or dislikes these numbers. The LECs want the discounts as low as possible and the company wanting to move into the local market is after a bigger margin to cover costs and make a profit. I guess we can't blame them.

Agreements have been reached in one or two areas and plans call for competition to begin in those areas relatively soon. In most localities, the LECs and the CLECs have not been able to work out an agreement so the CLECs have appealed to the state PUC which must arbitrate the case and try to come up with an agreement. It is a very slow process. In TR 9/9 there is an article on this topic with the title "On the 'Yellow Brick Road' Toward Local Competition, We're in a Field of Poppies." You can think about how that title might fit the situation.

The FCC's recent order requiring implementation of permanent local number portability (LNP) has prompted a flood of requests for reconsideration or clarification from wireless service providers and local exchange carriers (both) incumbents and new market entrants, according to *Telecommunications Reports* (9/2). The concerns are with the timing and the methods that may have to be used to make LNP work.

Many of the carriers have asked the FCC for help with the recent order on E911 requiring wireless service providers to pass on all calls from a cellular phone to the PSAP regardless of whether the cell-phone being used is legal or not (TR 9/9). One of the concerns is that if it is not legal, there most likely is no phone number associated with it that can be given to the PSAP for a call back. They are also concerned that there is not a universal standard used by all cell-phones and that there are still areas of the country where the location cannot be determined; hence, no location for the PSAP. Some segments of the industry are very concerned that all of these problems will not be worked out by the required date.

Desk Top Video in the University Environment

Mike Long

Univ. of North Carolina, Charlotte

The following is a summary of Mike Long's presentation at the ACUTA 25th Annual Conference.

Universities all over the world have been using video transmission for education and administration. Historically this type of video conference has been conducted in "Media Centers" where someone schedules that class or conference time for you and where you will find the expertise to run the cameras, adjust the sound, provide the document cameras, and produce the show. These are useful, necessary functions, historically speaking.

The problem with this arrangement is convincing people to come to use the facility for teaching. Most universities I have spoken with use the Media Centers for administrative meetings, and very seldom for actual distance learning.

At UNCC we, too, use our video centers primarily for conferences. Yet, there is a push in North Carolina to take classes to the people, instead of building the facilities to bring the people to the university. But, with this push to extend education beyond the ivory towers we develop a dilemma. Why do we invest significant money when we don't know if we will have any students? Why do we develop programs to generate off-campus students when we have no video equipment convenient, nor experience in using video?

Another dilemma is the politics. Who runs the show? All the Media Center people want to keep the technology close at hand. I have heard comments such as, "We shouldn't spend the money on desk top video until the demand is there. We should develop the programs, bring the classes into the Media Center. When we can no longer handle the load, then we should look at putting the video into the hands of the faculty."

The problem with this argument is that the video classroom may never be fully booked because faculty do not want to leave their labs and offices to conduct a

class out of their environment. Faculty do not want to be subject to schedules of others. People want the convenience at their facility.

This convenience has an answer in Desk Top Video. Those who have seen Desk Top Video (DTV) get excited about the possibilities. One professor compares the technology with that of personal computing vs. mainframe computing. Once people get DTV it will take off like personal computing. They believe that within a few years you will see DTV in most labs, offices, and classrooms.

Many companies are investing in DTV. Sprint's North Supply distributes many brands of DTV, with a full compliment of add-on devices (slide projectors, document cameras, inverse multiplexers, etc.). We have several vendors in Charlotte who distribute DTV equipment. There are several varieties of DTV systems. Some tie directly to BRI, basic rate interface, ISDN circuits. Others use WAN hubs that can interface with BRI or PRI, primary rate interface, ISDN.

Of these that use WAN hubs, I have seen three methods of transmitting the video signal around a campus environment. One uses broadband technology, which can ride on coax, twisted pair copper, or fiber optic cable. A second technology shares your Ethernet network bandwidth. Another uses ISO-Ethernet technology which basically expands your 10Mbps to 16Mbps to your desktop, using your current twisted pair copper (allowing you to have 6Mbps video, not interfering with your 10Mbps data).

You can see the pros and cons of each. If you have a limited need for DTV, BRI to a single desk would be most economical. Of course, you pay for the BRI circuit every month, whether it's used or not. If someone else wants to use it, you will have to rewire the circuit to the new location, or move the person to the circuit.

If you see demand for DTV growing, you may want to invest in the PRI technology, and share the bandwidth with oth-

ers on campus. This leads to billing issues of the PRI. You may want to charge a monthly access fee and usage for the long distance. Of the PRI technologies which is best for your campus? Look at your bandwidth requirement on your Ethernet: Will placing video on your Ethernet bring it to its knees? Look at your campus outside plant: Can you distribute broadband on your current network? Look at the cost of installing Multimedia hubs to set along side your Ethernet hubs.

As the use of DTV grows around the world, the technology will become easier to use. During the ACUTA conference, I placed many video calls, with little instruction on the equipment. I did find that some locations did not easily come on line. It helps to understand a little about the distant end's product. Another problem with dial-up video is standardization between the inter-exchange carriers. Many are using the multi-rate technology, NI-2. This allows multi-channel calling by dialing only one number. But, the distant end must also support that type of call. Some systems require you to dial a different number for each channel you want to bring up.

Making a long distance video call isn't much different from making a long distance voice call in the '50s. Sometimes it takes many attempts. Sometimes you have to play with the settings on both ends to get the best quality. But, once you are successful, and the settings are stored in your computer, the next call to that location just takes a click of the mouse.

Will dial-up DTV take off? Will Internet video dominate? Time will tell. I know that when your staff and faculty have access at their desk top, their world will change. When faculty can bring their whole class into a lab across campus, or across the world, excitement will build. The equipment is now here and available. The quality is definitely acceptable for the classroom. Is it time for you to introduce DTV to your faculty?

Overheard on the Listserve

The following comments were recently posted on ACUTA's Telecom Listserve. If you have not subscribed, access our Web page for instructions (<http://www.acuta.org>) or call Aaron Fuehrer at the ACUTA office (606/278-3338).

Block that pass

I was recently warned against returning calls to the 809 area code unless I know the caller. Scam artists have apparently linked an 809 number as a pass-through to a 900 number service. Individuals receive "urgent" or "important" messages on answering machines or voice mail telling them to call a number with the 809 area code. Dialing the number reaches a long recorded message which involves a substantial charge. There is no warning regarding this toll charge until the phone bill is received. (Another good reason to block all 809 calls unless explicitly needed.)

Mary Powell, Drexel Univ.
map@noc.drexel.edu

Check these out:

Here are three of the Top 10 Government Web Sites, according to *Inter@ctive Week* (5/20/96):

- The Federal Web Locator (one-stop shopping for govt info on the Web): www.law.vill.edu/Fed-Agency/fedwebloc.html
- Thomas (entire Congressional Record and all pending legislation): thomas.loc.gov
- U.S. Dept. of Education (all about U.S. education system): www.ed.gov/

Calling Card Promo

New marketing campaigns frequently cut into our long distance business... Here's the latest that I found.

"The Dr's On Call," a promo running through the end of 1997, provides pre-paid calling cards as a self-adhesive stick-on applied to products in vending machines. The lucky winners get 15 minutes of free long distance. Odds of winning are one in 120. Depending on the

size of your campus and the popularity of Dr. Pepper, that could be a good number of cards on campus. I do not know which carrier is co-marketing. I have requested that this promotion not be run here on the Wake Forest campus.

Buck Bayliff, Wake Forest Univ.
bayliff@wfu.edu

Automated Registration/Grade Report Access

Q: We are reviewing options for automated (TT) Registration and Grade report access. Any comments about your own implementation?

Kathleen Hartley, Georgetown Univ.

A: At UNM, we successfully implemented IVR for touch tone registration about four years ago. We selected a 64-port, PC-based system from EPOS which has been excellent. In recent years, the apps have been expanded to include grade reporting and financial aid status.

From the Telecom perspective, the system has been almost a "non-event." From the get-go, we decided to use Centrex lines rather than PBX lines because we feared heavy IVR traffic would monopolize our DID trunks. We're glad we made that decision.

Anne Apicella, Univ. of New Mexico
apicella@hydra.unm.edu

A: We have an EPOS as well and our experience is similar. Our students love it and I think it is one of the biggest things we have done to improve customer service to our students. We used dedicated trunks from off campus to protect our system and analog lines from on-campus. That way, off campus calls are limited to 24 channels by the dedicated trunk and on-campus calls have access to all 64 channels without blocking our trunks on the outbound side.

We paid a lot of attention to doing everything possible to eliminate any cross talk on any analog lines. For security reasons this was very important to the Registrar's Office. We did this by using

Position Available

University of Rochester • Director of Telecommunications

Responsibilities: Direct division in best use of large voice/data communications systems. Manage approx. 49 FTEs with approx. six direct reports. Annual budget of \$10M. Involve div in learning technology efforts of University, incl. completion of Residence Network; estab. campus cable TV service, investigate distance learning alternatives. Involve div. in telemedicine & med. network infrastructure of large teaching hospital. Provide fiscal mgmt. of recharge program, ensuring responsible budget allocation/expenditures consistent with campus goals. Develop, propose, implement policy & plans for current/future communication services. Represent campus admin. in communications matters outside the Univ. Division is responsible for infrastructures & systems needed in support of voice, data, video (future) and special purpose systems, incl. cellular & pager services, remote network access & Internet connection. (Visit our Web site, <http://www.utd.rochester.edu>) for more info.

Qualifications: BS in EE, Telecom, or related. Masters+ pref. Knowledge of existing/emerging communications hardware/software technologies. Min. 5 yrs relevant technical & supervisory exp. leading complex communications organization with large staff incl. highly trained specialists or equiv. combination of educ. & exp. Ability to communicate openly & effectively. Excellent leadership qualities. Exp. in higher ed. preferred.

To Apply: Submit resume by 10/18/96 to: Kathy Tanchick, Univ. of Rochester, Computing Ctr-Taylor Hall, Rochester, NY 14627 or e-mail to kathy_tanchick@macmail.cc.rochester.edu.

twisted pair almost to the back of the computer (instead of flat gray cable station cable) and installing category 5 cable from the IDF to the termination in the computer room.

Randy Sailer, Univ. of Mass., Amherst
Randy.Sailer@oit.umass.edu

Univ. of Maryland at College Park puts student services on Web

Last spring the University of Maryland at College Park began to reach out to students using the World Wide Web with undergraduate application services, transfer course equivalency viewing, grade look-up, student account inquiry, schedules of classes with seat availability, on-campus dorm room availability, an off-campus housing search, and an automated registration schedule builder named VENUS. The latter, an in-house graphical module which allows students to select from many schedules built automatically from specified courses, considers seat availability and desired waitlist limits, blocks out times of day to avoid classes, and allows wild cards in searching for groups of courses and departments. The group of Web services is known as TESTUDO, for the school mascot; a secure server requires student ID and PIN where appropriate. Planned additions include financial transactions and academic auditing. See <http://www.testudo.umd.edu>

ACUTA representative at Univ. of Maryland/College Park is Dorothy Chrismer

Univ. of Iowa opens multi-media classroom

The Information Commons, a 5,000-square-foot multimedia teaching facility at the University of Iowa Hardin Library for Health Sciences, opened this month. The electronic classroom seats 50 and includes 25 workstations for students, faculty, and staff to use for class-related and independent projects. A collaboration between University Libraries and the College of Medicine, the goals of the \$1.5-million project are to increase student literacy in electronic information, promote scholarly creativity through new technologies and information resources, and encourage integration of information technologies into the curriculum.

ACUTA representative at Univ. of Iowa is William Cleveland.

Westminster College residence halls go online

Westminster College in Pennsylvania is completing the second phase of a multi-million-dollar telecommunications network this fall. The College has expanded its network, called TitanNet, to bring communications technology across academic disciplines, to computer labs, and to individual rooms in its nine residence halls. Utilizing an ATM backbone, the network is technically the most advanced in the area.

ACUTA representative at Westminster College is Brian Vine.

Network use soars at University of Arizona

The University of Arizona computing newsletter has quantified some of the ways in which use of the campus network grew in the past year. Modem connections per day increased 55 percent (from 13,000 in 1995 to 20,100 in 1996), while daily UAInfo connections soared by 83 percent (from 29,000 in November 1995 to 53,000 in February 1996). The number of computers on UANet increased 59 percent between April 1995 and May 1996 (8,500 to 13,531); e-mail accounts rose by 65 percent between fiscal years 1995 and 1996 (23,500 to 39,526). [Source: *Computing & Communications News*, May/June 1996]

In an unrelated announcement, *The Heller Report* (9/96) describes the formation of the UA/Lucent Technologies Alliance for Learning, a joint venture of the University of Arizona and Lucent Technologies. The Alliance will collaborate on creating a "virtual classroom" and designing instructional software tools and collaborative environments based on users' personal learning styles, interest, and real-world needs. In addition, the Alliance plans to develop a user-friendly multimedia administrative system and integrate UA's telephone, data, and video equipment and services into a multimedia network connecting buildings, homes, and businesses.

ACUTA representative at Univ. of Arizona is Amelia Tynan.

Campus News Briefs



Illustration courtesy of MCI

Univ. of Wisc/Milwaukee students approve of technology fee projects

In spite of early skepticism about a new student educational technology fee, response of student government leaders to the list of projects approved for funding is positive. High on the priority list is 24-hour access to a computer lab in Sandburg Residence Halls and completion of another general access lab. The Advisory Committee on Educational Technology, comprising five students and six faculty and staff, approved nearly two dozen projects, including expansion of an electronic reserve system at the Golda Meir Library inaugurated last spring when two professors made course reserve materials available via a Web site maintained by the Library. The arrangement allows Library staff to monitor copyright issues and restrict access to UWM students. The Library will be offering free Information Literacy workshops to students on a walk-in basis. [UWM Info on Tap, Summer 1996]

ACUTA representative at Univ. of Wisconsin/Milwaukee is Linda Levenhagen.

Thanks to CAUSE's electronically delivered Campus Watch for some of the information on this page.

Industry Insights



Diskless PCs

As chairman of Advanced Modular Solutions, Former Digital Equipment president Ken Olsen is pushing a new diskless PC. Developers consider it the perfect solution for companies that want to limit viral exposure by controlling what software is installed on their employees' machines. According to the *Wall Street Journal* (9/18/96), the tissue-box-size CPUs are used at NASA's space-shuttle operations, ensuring that all 400 workstations have uniform configurations and the network remains free from viruses introduced through workers' home-grown software and pet programs.

Cellular phone poses risk for pacemaker

Heart patients should keep cellular phones at least six inches away from their pacemakers to avoid interference problems, according to a report by Wireless Technology Research L.L.C. A recent study confirmed that certain wireless phones can cause interference, resulting in increased or decreased heart rates. Out of 5,553 exposures to wireless phones, interference of some type occurred about 20% of the time. Some types of pacemakers resisted interference, and digital phones were more likely to cause interference than analog phones.

Pacemaker users should avoid placing cellular phones directly over their pacemakers, and place their phones to the ear opposite their pacemaker. Nothing in the study suggested that pacemaker users are at risk from others' use of wireless phones.

Long distance: Call anywhere for one price?

According to Yankee Group Europe research director Graham Finnie (*tele.com* Aug 96), long distance phone rates will eventually follow the lead of the Internet into distance-insensitive pricing. Maintaining that the world's international networks are not a finite resource, Finnie predicts that by the time the bandwidth starts getting crowded (1998 or so), technology will have bandwidth-saving solutions such as mirroring, caching, and more rational routing. "The unpalatable truth for telcos is that, despite the cuts of the last decade, the price of an international phone call is still way out of line with the underlying cost of carrying it... The real capacity problem is the unwillingness of the old transatlantic cable club members to make bandwidth available to new players... The Internet is the first network in which distance-insensitive pricing has been realized — but it won't be the last."

"Smart" paper takes control

TV Interactive has come up with a touch-sensitive "smart" paper that can be used to control consumer devices just like a typical infrared TV remote control, according to the *Wall Street Journal* (9/9/96). The paper is coated with a grid of carbon-based ink that can conduct electricity. Pressing a certain point on the paper sends an electrical signal to a tiny microchip embedded in the page, which then beams a command to a computer, television, or other electronic appliance. The technology is already in use in Japan, where karaoke fans use "touch-and-view" catalogs of songs to start sing-along videos on their PCs. In the future, the paper could allow consumers to listen to part of a music CD without removing the shrink-wrap, or enable someone consulting a how-to book to press a certain piece of text and watch a video on the procedure over their PC.

Check it out

Author Janet Novack ("Check-free" *Forbes*, 9/9/96) suggests that America will be a more *checkless society* before the year 2000 since Uncle Sam will be forced by a provision of the recent budget compromise to abandon paper checks almost entirely before 1999. All one billion government checks—Social Security, Medicare, Medicaid—will have to be made through electronic transfers.

Adding impetus to the move will be the experience of today's university students with prepaid cards. Already familiar with cashless transactions, this generation will be reluctant to revert to writing checks for their purchases.

Spotlight

Welcome to four of ACUTA's most recent Corporate Affiliate members:

Carlton Telecom Systems is a leading manufacturer of inside premises and outside plant cable installation ducts and raceways. Our products protect your cable from start to finish and make your installation consistent and worry free. *John Zgonc 216/766-6672*

KLF Business Communication Systems: Providing telecom solutions from complete Siemens Rolm systems to parts for your next department move. We are KLF, one of the largest independent suppliers of telecom in the U.S. *Don Barrett 800/681-2KLF*

Vitel Software provides custom and commercial software for the Fortune 1000, university and government organizations. Our VMACS-Plus software provides automated solutions for controlling dynamic voice mail environments. VISIBill provides inexpensive and centralized management of telecom expenses. *Sue Andersen 508/831-9700*

WinStar Telecommunications provides digital interconnection & switched services capabilities. Utilizing nationwide 38Ghz licenses, we offer Wireless Fiber™ services (DS1/DS3) to extend existing networks & provide diversity. WinStar also offers local/long distance services & Internet capabilities. *201/655-1189; jkeating@winstar.com*

OOPS! Last month we introduced **College Billing Inc.**, but a typo in their Internet address slipped by. We apologize for any inconvenience. The correct address is www.collegebilling.com

Suppliers as Partners

This month's column focuses on the important role of ACUTA's Corporate Affiliate members in supporting both the association and its institutional members.

ACUTA members rely on telecommunications suppliers as one important source of information on current and emerging technologies. The information provided by suppliers is vital to telecommunications managers, as they guide their institution's strategic technology planning and purchasing decisions.

Solid relationships with suppliers can help us to anticipate and meet needs, avert catastrophes, recover from emergencies, and work miracles when called upon to do so.

ACUTA recognizes the importance of Corporate Affiliates by welcoming their participation in the association in many ways:

- Membership on the Vendor Liaison Committee
- Membership on other committees and task forces
- Serving as faculty at Seminars and the Annual Conference
- Writing informational articles for the *ACUTA News*
- Encouraging technical article submissions for the new *Journal of Telecommunications in Higher Education*, and inviting a supplier representative to serve on the Editorial Board
- Inviting their participation in electronic discussion groups (listserves)
- Inviting their attendance at the Annual Business Meeting of the Association

Corporate Affiliates also assist the association through their financial support of our educational programs and publications. We strive to make this a mutually beneficial arrangement which provides useful information to ACUTA members while offering valuable exposure to suppliers. Their financial support makes it possible for us to maintain and expand member services, while minimizing dues increases. This support includes:

- Membership dues from 138 member companies (up from 120 at this time last year)

- Exhibits and sponsorships at the Seminars and Annual Conference
- Advertisements in the Membership Directory *Guide to Products and Services*
- Advertisements in the new Journal
- Links from the ACUTA World Wide Web site

The aforementioned Vendor Liaison Committee is the focus of liaison and communication between ACUTA and the vendor community. This important committee, chaired by Pat Searles of Cornell University and consisting of two institutional members, ten Corporate Affiliates, and a liaison from the Board of Directors, recommends policies to enhance the relationship between suppliers, ACUTA, and our members. This committee meets monthly by conference call. They welcome and encourage suggestions from both Corporate and Institutional members regarding vendor involvement. Suggestions can be forwarded directly to Pat Searles at pas2@cornell.edu.

ACUTA views its connection with the supplier community as a long term relationship, to which we are committed as an organization. Through the exchange of information and mutual discussion of needs in an ongoing dialogue with supplier partners, both the industry and higher education will benefit.

From ACUTA Headquarters



Jeri A. Semer, CAE

ACUTA
Executive Director

1997 Events Calendar

Winter Seminar

January 19-22

Ponte Vedra Beach, FL

Marriott at Sawgrass Resort

Track I: Negotiating In a New Era of
Local and Long Distance Competition

Track II: Integrating Networks

26th Annual Conference

July 13-17

Atlanta, GA

Marriott Marquis

Spring Seminar

April 19-23

Las Vegas, NV

Alexis Park Resort

Topic: Student Services &
Revenue Generation

Fall Seminar

October 19-22

Albuquerque, NM

Hyatt Regency

Track I: Strategic Planning & Team Management

Track II: Hot Topic To Be Determined

Position Available

Michigan Technological University Telecommunications Engineer

Responsibilities: Provide technical leadership for supervision & operation of audio/visual telecommunication systems including TV studios, videoconferencing, & satellite systems. Key member of Educational Technology Team.

Qualifications: BA/BS in telecomm-related field or equiv.; 3 yrs technical telecomm exp. with AV systems & PCs incl. advanced features of word processing/spreadsheets/databases/computer design software; demonstrated communication exp. & problem solving skills.

To apply: Submit cover letter, current resume, & names/addresses of three work-related refs to: Telecommunications Engineering Position, Human Resources, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931-1295. Applications accepted until the position is filled.

Contact <http://www.mtu.edu> for additional information about MTU. Equal opportunity education institution/equal opportunity employer.

Position Available

Miami University, Ohio

Asst. Mgr. of Telecommunications - Operations

Responsibilities: Reporting to Manager, individual oversees & coordinates operation of telephone switching eqpt., ancillary systems, & cable plant, incl. maintenance, repairs, installation, traffic control, & system configurations. Assists in planning, project management, & system reporting.

Qualifications: Requires working knowledge of telecomm systems & operations, both technical & administrative. Relevant work exp. with telephone utility, interconnect companies, or large in-house operation highly desirable. Prior hands-on experience with NEAX 2400 a plus. AA/BS in relevant field desired. Expected salary mid \$30s, depending upon qualifications & experience.

To Apply: Send complete resume, incl. salary history & names, addresses, & phone numbers of at least 3 business refs to: Richard Keebler, Dir. of Business Services, Miami Univ., Oxford, OH 45056. Applications accepted until position is filled.

Position Available

Eastern Washington University Senior Systems Programmer

Responsibilities: Working in collaboration with others, this Senior Systems Programmer position is responsible for managing successful completion of system software projects, assisting programming & operations staff, & for managing satisfactory delivery of technical support services. Position is also responsible for planning, scheduling, & controlling multiple complex systems projects concurrently, as well as software installation & maintenance projects. Responsibility for monitoring systems performance & security & troubleshooting systems problems. Systems projects may include procuring new systems directly from user requirements, or customizing packaged systems purchased from software vendors. Software projects may include disk storage management, database administration, network management, & security administration.

Qualifications: Demonstrate exp. with DEC VMS operating systems, TCP/IP network protocols, & DEC/VAX clusters. UNIX exp., project mgmt exp., & an ability to work in self-directed workgroups desirable. B.S. in Comp. Sci. or equiv. educ. & exp. required.

Salary: \$37,121 - \$51,972

To Apply: Submit letter of app; resume; & names, addresses & telephone numbers of 3 refs to: Selection Committee Chair, Div. of Human Resources, MS 114, Eastern Washington Univ., 526 Fifth St., Cheney WA, 99004-2431. AA/EOE; applications from members of historically underrepresented groups are especially encouraged to apply.

Submit Job Postings Electronically

Submit your job posting electronically when you access ACUTA's homepage. Fill in the blank or cut and paste your copy; at the touch of a button your information is on its way. We will automatically include your listing in the printed version of the newsletter unless position closing and newsletter printing dates conflict. **Please notify us when your position has been filled so that we can remove your listing from our homepage.**

Congratulations...

To Paula Loendorf who assumes the position of Director of Tele/Video Communications at Duke University November 1.

Position Available

Michigan State University Broadband Networks Engineer

Responsibilities: Engineering & operation of data & CATV networks running on baseband, broadband RF, & fiber optic media. Coordinates data, video, & CATV activities with other campus technical mgrs.

Qualifications: RBSEE & 5+ yrs exp in planning, design, installation, testing, training, & operation of state-of-the-art networks, & PE registration required. Technical knowledge of digital, analog, RF & fiber optic systems, communication protocols and systems (TCP/IP, ethernet, FDDI, ATM) is desired.

To Apply: Contact 517/432-1662 to request an application by 11/1/96. Refer to posting S60183. AA/EOE

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Association of College & University
Telecommunications Administrators
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Lexington, KY 40503-2486